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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,618	10/29/2003	Allen A. Aradi	NM 7607	5585
66882 7590 10/31/2007 NEWMARKET SERVICES CORPORATION c/o JOHN H. THOMAS, P.C. 536 GRANITE AVENUE RICHMOND, VA 23226				
			EXAMINER TOOMER, CEPHIA D	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 10/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/696,618

Applicant(s)

ARADI ET AL.

Examiner

Cephia D. Toomer

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This Office action is in response to the amendment filed August 4, 2007.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 12-22 and 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Dorer (US 4,664,677) in view of Kalghatgi.

Dorer teaches a fuel composition for internal combustion engines comprising a manganese containing compound and a copper-containing compound (see abstract). The disclosure of internal combustion engine encompasses a spark ignited internal combustion engine having a fuel injection system and 6 or more cylinders as set forth in claims 12, 14, 26 and 28, absent evidence to the contrary. The compounds may be inorganic or organic. Examples of the inorganic compounds include manganese oxides, manganese hydroxides, manganese carbonates, copper oxides, copper hydroxides, manganese carbonates, copper oxides, copper hydroxides, and copper carbonates (see col. 1, line 65 through col. 2, lines 1-2). The organic compounds may be salts of carboxylic, sulfonic and phosphorus acid (see col. 2, lines 7-17). The fuel compositions have a combined manganese and copper content of about 1-1000 ppm and the fuel may be gasoline (encompasses unleaded) or diesel (see col. 7, lines 13-18, 26-43,

Examples VI and VII). Dorer teaches that the fuel additive of his invention reduces engine deposits (see col. 1, lines 50-55).

Dorer teaches the limitations of the claims other than the methods of claims 1 and 15. However, the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentably new to the discover. Thus the claiming of a new use, new function or unknown property does not necessarily make the claims patentable. Furthermore, Kalghatgi teaches that the use of conventional detergent additive packages makes the combustion chamber deposit (CCD) less likely to flake. Since the metal compounds of Dorer function as detergents and Kalghatgi teaches that detergents reduce flaking, it would be reasonable to expect that Dorer would reduce combustion chamber deposit flaking.

With respect to the method of reducing cold start emissions, it would be reasonable to expect that Dorer also meets this limitation since his additives reduce ignition temperature of particulates and reduces emissions.

3. Claims 1-3, 6-10, 12-17, 20-24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henderson (US 3,179,506) in view of Kalghatgi.

Henderson teaches a hydrocarbon fuel of gasoline (encompasses unleaded) for use in spark ignition internal combustion engines wherein the fuel comprises methylcyclopentadienyl manganese tricarbonyl (see claim 4). The disclosure of spark ignition internal combustion engines suggest a fuel injection system and 6 cylinder engine as set forth in claims 12, 14, 26 and 28 , absent evidence to the contrary. Henderson teaches that the fuel does not lay down combustion chamber deposits (see

col. 2, lines 15-19) and . The manganese compound is present in the fuel in an amount up to 2 g/gal fuel (see col. 6, lines 26-30).

Henderson teaches the limitations of the claims other than the methods of claims 1 and 15. However, the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentably new to the discover. Thus the claiming of a new use, new function or unknown property does not necessarily make the claims patentable. Furthermore, Kalghatgi teaches that the use of conventional detergent additive packages makes the combustion chamber deposit (CCD) less likely to flake. Since the metal compounds of Henderson function as detergents and Kalghatgi teaches that detergents reduce flaking, it would be reasonable to expect that Henderson would reduce combustion chamber deposit flaking and by reducing the flaking would also would reduce cold start emissions.

4. Claims 11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henderson and Kalghatgi as applied to claims above, and further in view of Kaneko (US 5,401,280).

Henderson has been discussed above. Henderson fails to teach the sulfur content of the gasoline. However, Kaneko teaches this difference. Kaneko teaches gasoline compositions wherein the maximum sulfur content of the gasoline is 50 ppm or less (see col. 3, lines 15-20).

It would have been obvious to one of ordinary skill in the art to select a gasoline comprising less than 30 ppm sulfur because Kaneko teaches that gasoline should have less than 50 ppm sulfur otherwise the exhaust gas cleaner would malfunction. Also, the

greater the amount of sulfur that is present in the fuel the greater the amount of harmful SO<sub>x</sub> emissions.

5. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that there is no reduction in engine deposits as a result of the Dorer composition. Instead, less deposit is actually formed because less copper compound is used.

Dorer states that deposits "can form" with the use of the copper compound. However, no where in the disclosure of Dorer is it stated that more deposits than usual are formed when the copper compound is used. Furthermore, Dorer's statement that a reduction in engine deposits occurs is an affirmation that the combination of copper and manganese compounds does indeed reduce engine deposits.

Applicant argues that the examiner's statement that the metal compounds of Dorer function as detergents to reduce deposits is contrary to the passage in Dorer that fewer deposits are formed and that no deposits are actually removed by the copper compound.

Applicant is claiming metal-containing compounds that encompass those of Dorer. In claim 2, Applicant recites that the metal may be copper and at page 9 of the specification Applicant discloses that the inorganic metallic compound may be an oxide. Therefore, if copper oxide performs as a detergent in the present invention it stands to reason that it would also perform that function in Dorer. Dorer never states that the copper compounds always form deposits. The person of ordinary skill in the art having Dorer before him/her would have a reasonable expectation that the combination of the

Art Unit: 1797

copper compound and manganese compound would reduce deposits, as Dorer states at column 1.

Applicant argues that Henderson does not reduce combustion chamber deposits but instead does not increase the tendency to lay down combustion chamber deposits.

The examiner maintains that if the claimed compounds reduce deposits in the present invention it would be reasonable to expect that they would perform the same function in Henderson. Although Dorer and Henderson are not specifically directed to the same advantage as the present invention, a person of ordinary skill in the art utilizing this fuel additive composition in a spark ignited internal combustion engine would necessarily have been practicing the claimed invention. *Mehl/Biophile Int'l Corp v. Milgraum*, 52 USPQ2d 1303 (Fed. Cir. 1999). *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990). *In re Spada*, 15 USPQ2d 1655 (Fed. Cir. 1990).

Applicant has provided the complete document of Kalghatgi and takes the position that Kalghatgi supports Applicant's position that the present invention is unexpected and inappropriate for combination with either Dorer or Henderson. Applicant relies upon conclusions 2, 3, and 5 to support this position.

With respect to conclusion 2, Dorer and Henderson teach conventional additives, so therefore they would suppress flaking.

With respect to conclusions 3 and 5, the examiner recognizes that there are variables that determine whether deposition flaking occurs. However, as stated above, Dorer and Henderson are using the same compounds as those set forth in the present invention and if these compounds function to reduce combustion chamber deposit

flaking in spark ignited internal combustion engines in the present invention, it would be reasonable to expect that they would perform this function in Dorer and Henderson. Applicant has not set forth that the temperature or operating regime of the present invention differs from that of the prior art.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cephia D. Toomer  
Primary Examiner  
Art Unit 1797

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